DOCUMENT RESUME

ED 471 506 HE 035 543

AUTHOR	Sax, Linda J.; Bryant, Alyssa N.; Gilmartin, Shannon K.
TITLE	A Longitudinal Investigation of Emotional Health among First-Year College Students: Comparisons of Women and Men.
PUB DATE	2002-11-00
NOTE	34p.; Paper presented at the Annual Meeting of the Association for the Study of Higher Education (27th, Sacramento, CA, November 21-24, 2002).
AVAILABLE FROM	For full text: http://www.eriche.org/ASHEpapers02/ Sax%20-%20A%20Longitudinal%20Investigation.PDF.
PUB TYPE	Reports - Research (143) -- Speeches/Meeting Papers (150)
EDRS PRICE	EDRS Price MF01/PC02 Plus Postage.
DESCRIPTORS	Adjustment (to Environment); *Change; *College Freshmen; *Emotional Adjustment; Higher Education; *Mental Health; *Sex Differences; Student Adjustment

ABSTRACT

This study investigated how college students change in the first year of college with respect to their emotional health and how aspects of the college environment affect students' emotional health. Data were drawn from the 200 Cooperative Institutional Research Program (CIRP) Freshman Survey completed by 269,413 students in fall 2000 and the 2001 Your First College Year survey completed by a subset of 3,680 students from the CIRP. A. Astin's (1993) Input-Environment-Outcome model provided the framework for the study. Findings show that between the time students begin college and the end of their freshman year, declines in emotional health are apparent for both men and women. Findings also show lower levels of emotional health for women than for men, a finding that may reflect lower emotional health or a greater willingness to admit feelings of depression, loneliness, and isolation. Distancing oneself from the family had a positive effect on women's emotional health, but no such effect on the emotional health of men. The study also provides evidence that academic factors contribute directly to emotional health. The study raises many questions about the emotional well-being of students and makes the need for further research clear. Two appendixes contain variable definitions and coding schemes for the study. (Contains 3 tables and 28 references.) (SLD)

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A Longitudinal Investigation of Emotional Health Among First-Year College Students: Comparisons of Women and Men

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Linda J. Sax
Alyssa N. Bryant
Shannon K. Gilmartin

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Higher Education Research Institute
Graduate School of Education and Information Studies
University of California, Los Angeles

Please direct all correspondence regarding this paper to:
Prof. Linda J. Sax
Higher Education Research Institute
University of California, Los Angeles
3005 Moore Hall, Mailbox 951521
Los Angeles, CA 90095-1521
Phone: 310-825-1925
Fax: 310-206-2228
Email: lsax@ucla.edu

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Introduction

As noted in a wide range of academic journals as well as more mainstream publications, women tend to report higher levels of depression than do men. The American Psychological Association's (APA) National Task Force on Women and Depression estimates that women are twice as likely as men are to experience depression (McGrath, Keitha, Strickland, & Russo, 1990). The college student population is no exception to this trend: nationally representative data collected as part of the annual Cooperative Institutional Research Program (CIRP) Freshman Survey reveal that far more male than female first-year college students rate their emotional health as above average relative to their peers, a trend that has persisted since this question was first included on the survey in 1985 (Sax, Lindholm, Astin, Korn, & Mahoney, 2001). Further, many more female students than male students feel overwhelmed and/or depressed on a frequent basis, again pointing to an enduring trend among first-time, full-time freshmen at four-year institutions (Sax et al., 2001). Of course, this is not to say that male college students are at minimal risk. Declining levels of emotional health have been observed over time for both male and female college students (Sax et al., 2001). Nonetheless, women seem to suffer from feelings of stress and anxiety in greater numbers than men do.

To what can we attribute gender differences in depression and emotional health? How might we explain depression in college, particularly among female undergraduates? This study explored how levels of emotional health and depression changed over the first year of college for a national sample of first-year students, with particular attention to how women and men differed or were similar with respect to these changes. Furthermore, we addressed the implications of various college environments and experiences for emotional adjustment to college net of student background characteristics.

Background of the Study

Generally speaking, the likelihood of depression is higher among individuals of lower socioeconomic status, in part due to the psychological toll that lower educational attainment, occupational segregation, financial hardship, and unemployment can take (McGrath, Keita, Strickland, & Russo, 1990). To the extent that women (especially women of color) disproportionately comprise the lower strata of income and occupation, and, accordingly, more often face the challenges associated with these difficult socioeconomic circumstances, we begin to see why women may be more vulnerable to depression than men are (McGrath et al., 1990). Gender-related cognitive styles (e.g., "expressiveness" versus "instrumentality") also may help to explain the disparity in women and men's reported levels of emotional health (McGrath et al., 1990).

More specific to the college-age population are relationships with family members, friends, and romantic partners, relationships that enhance or complicate emotional well-being in a myriad of ways and oftentimes depending on the sex of the student. For instance, given that female undergraduates tend to report closer ties to and lower levels of separation from family members than male undergraduates do (Kenny & Donaldson, 1991; Lapsley, Rice, & Shadid, 1989; Lopez, Campbell & Watkins, 1986), we might expect to see that relationships with parents and siblings are more closely associated with women's psychological health than with men's. Apropos of this, Kenny and Donaldson (1991) find that secure parental attachments are critical to women's emotional health during the first college year, but appear to be less salient among a (much smaller) sample of men. However, close relationships with family members are not always adaptive for women or men: several researchers emphasize that various forms of dependence on family members may disrupt the process of adjustment to college and

psychological well-being among both female and male first-year students (e.g., Lapsley, Rice, & Shadid, 1989).

Turning to friendship, a sense of camaraderie with peers is generally associated with higher levels of emotional health during adolescence, regardless of sex (Hartup, 1993), but certain groups of friends likely play a more positive role in college students' lives than do others. As one example, maintaining close ties to off-campus friends at the expense of nurturing on-campus friendships may disrupt the social integration process and undermine college students' satisfaction with campus life (see Christie & Dinham, 1991). Romance poses a similar dilemma: while romantic partners might offer emotional support and companionship, college students do not always experience romance in a positive or comforting way. One longitudinal study of undergraduate women finds that those who are involved in a romantic relationship seek medical attention for a host of physical and emotional reasons in greater numbers than do their non-romantically-involved female peers (Riessman, Whalen, Frost, & Morgenthau, 1991). Related research indicates that long-distance romance might not bode well for the emotional health of female and male college students (Guldner, 1996), nor might a break-up with a romantic partner (Kaczmarek, Backlund, & Biemer, 1990; Mearns, 1991). Thus, close relationships comprise the proverbial "mixed bag," at least from the perspective of psychological health. In addition, many researchers in the area of women's development argue that close relationships figure strongly into girls' self-esteem and psychological functioning during the transition to college, be it with parents, siblings, mentors, friends, or romantic partners (see Beeber, 1999; see also Liang, Tracy, Taylor, Williams, Jordan, & Miller, 2002). Taken more broadly, emotional health among women is closely tied to their relationships—many tend to measure themselves, their worth, and their personal success by the quality of their connections to others (although the body of literature in

this area is extensive, Josselson, 1996, provides a particularly poignant look at these dynamics). Whether the psychological impact of interpersonal relationships in their entirety is just as strong for first-year male students as it is for first-year female students stands as one important question raised in the current study. [It bears mention that Astin (1993b) points to the peer group as one of the most decisive factors in student development, but does not examine the effects of the peer group separately for women and men.]

A myriad of other factors that might play into young adults' emotional health include cigarette smoking, physical activity, spiritual involvement, and racial/ethnic identity. While smoking seems to be associated with lower levels of psychological well-being among adolescents, the effect of one on the other is likely reciprocal (see M. Windle & R.C. Windle, 2001). Both physical activity and spiritual involvement may be associated with higher levels of psychological health (for the former, see Parsons & Betz, 2001; for the latter, see the 1999 report on spirituality and health research issued by the Fetzer Institute and the National Institute on Aging Working Group). However, young women who participate in sports or other types of physical activity also might be at greater risk for "body shame," or believing that they are "bad people" if they do not "meet cultural expectations of the female body" (Parsons & Betz, p. 214). Thus, high rates of physical activity may be a bit of a double-edged sword, particularly for women [though beyond the scope of the current research, there are several interesting studies on this very topic—Smolak, Murnen, and Ruble's (2000) meta-analysis of female athletes and eating disorders is a good place to start]. Students' race/ethnicity might affect their emotional health as well, and for a variety of reasons, not the least of which are patterns of professional help-seeking that appear to differ by racial/ethnic group. For example, Narikiyo and Kameoka (1992) find that Japanese American students are less likely than are White students to seek

professional help for emotional strain. In addition (and as suggested earlier), students belonging to racial/ethnic minority groups may enter college with greater socioeconomic stress than that experienced by non-minority students, which could predispose these adolescents to higher levels of depression.

Also important is the extent to which classroom experiences and types of co-curricular involvement affect levels of emotional health among first-year women and men. Along these lines, several studies examine gender differences with respect to positive or negative academic feedback. Lundgren and Rudawsky (1998) find that female college students may receive more negative feedback than do male college students, which leads to greater rejection of academic feedback among women than among men. Other studies indicate that more women than men actually use such feedback in order to improve their skills—that is, they find more "informational value" in feedback than do men (Roberts & Nolen-Hoeksema, 1994). Further, Lundgren, Sampson, and Cahoon (1998) suggest that feedback on academic performance might be more central to women's self-esteem than to men's. How academic feedback then relates to women's and men's psychological functioning remains to be seen, although we might reasonably guess in light of this literature that academic performance and feedback would be more predictive of women's emotional health than of men's—particularly if self-esteem and psychological well-being are highly interrelated.

Finally, literature on the "chilly climate" in many college classrooms suggests that certain environments undermine the overall adjustment of women by catering exclusively to more male-friendly forms of learning and knowing. In response to such climate research, Martinez Aleman (1997) finds that women's friendships with one another are, in effect, critical mediums through which female students can discuss their coursework and flesh out ideas in a non-argumentative

and intellectually safe environment, thus counteracting the negative effects of the chilly classroom. Still, the academic stress experienced by women may be higher than that of men irrespective of friendship. One recent study of psychological counseling needs among students at a single campus reveals that significantly more women than men reported test anxiety, fear of failure, public speaking anxiety, and feelings of inadequacy (Bishop, Bauer, & Becker, 1998). Thus, those affective experiences wrought by the classroom may be strongly related to women's psychological well-being, and are important to explore as possible precursors to emotional health among both college women and men. As an interesting and related aside, the relationship between emotional health and academic performance per se has not been widely studied (Heiligenstein, Guenther, Hsu, & Herman, 1996), thus raising yet another question for the current research: How is academic performance linked to college students' psychological health net of such confounding factors as choice of major, prior academic performance, patterns of extracurricular involvement, and family background?

Objectives

As students begin college, they are subjected to an array of challenges both inside and outside of the classroom. As these stressors accumulate during the first year, the emotional well-being of students may simultaneously decline. The possibility of differential effects by gender adds further complexity to the question of how college impacts students' psychological health. Using longitudinal data derived from the 2000 Cooperative Institutional Research Program (CIRP) Freshman Survey and the 2001 Your First College Year (YFCY) survey, our study addressed the following questions:

- How do students change in the first college year with respect to their emotional well-being? How are changes among women comparable to changes among men?

- How do aspects of the college environment, including characteristics of the institution; academic major; classroom experiences; extracurricular involvement; religious activities; family support; and faculty and peer interactions, affect students' emotional health net of individual predispositions and other background characteristics?

Because women and men may experience college differently, these analyses considered the implications of various college experiences separately for men and women.

Methods

Sample

Data for this study were drawn from the 2000 CIRP Freshman Survey and the 2001 YFCY survey. The Freshman Survey is a four-page questionnaire administered annually to entering students at over 700 colleges and universities nationwide. YFCY is a follow-up questionnaire jointly developed by the Higher Education Research Institute (HERI) at UCLA and the Policy Center on the First Year of College at Brevard College, and funded in part by The Pew Charitable Trusts and The Atlantic Philanthropies. Designed and administered at the end of students' freshman year, YFCY post-tests a variety of items from the CIRP Freshman Survey, thus allowing us to measure students' cognitive and affective development since entering college. Taken together, these instruments address several aspects of the first-year experience, including: academic, residential, and personal experiences; academic and social adjustment; levels of satisfaction with campus life; life goals; degree aspirations; and measures of self-concept. The CIRP Freshman Survey was completed by 269,413 first-time full-time students at 434 baccalaureate institutions in Fall 2000. A small but representative subset of these students was asked to complete the YFCY Survey in Spring 2001. The sample for this study included 3,680 students who responded to CIRP and YFCY at 50 colleges and universities nationwide.

Research Methods

Astin's (1993a) Input-Environment-Outcome (I-E-O) model provided the framework for our study. In short, the I-E-O model assumes a relationship between student predispositions or background characteristics (inputs) and college outcomes. To determine the effect of various college environments and experiences on students' emotional health, it is important to first control for the confounding influences of student input characteristics. In considering the net impact of college, we can make causal inferences with more certainty.

The dependent variable (emotional well-being) consisted of items pertaining to the frequency with which first-year college students felt: depressed; isolated from campus life; lonely or homesick; worried about meeting new people; and unmotivated. Importantly, these items were reverse-coded, such that a higher score on the emotional health scale corresponded with well-being rather than maladjustment. This factor composite also included students' self-rated emotional health compared to others their age. The Cronbach's alpha for the dependent variable was .71 and a confirmatory factor analysis revealed acceptable factor loadings for each item, justifying our use of these items within a single factor. An emotional health pre-test factor was created using two items from the CIRP freshman survey: emotional health self-rating and frequency of depression (reverse-coded). Although the Cronbach's alpha was lower for the pre-test (.56), it was deemed adequate, as were the factor loadings (see Appendix B).

To understand how students' emotional health changed over the first year of college, we first performed a series of crosstabulations, separately for women and men, using the two items from our emotional health dependent variable factor that were among the pre-tested CIRP survey items (emotional health self-rating and feeling depressed).

Using blocked, stepwise regression, our initial analysis involved regressing the emotional health factor on a variety of independent variables separately for men and women. As stipulated by the Input-Environment-Outcome model of assessment (Astin, 1993a), we entered blocks of variables into the regression model chronologically such that pre-existing student characteristics were controlled prior to the entry of environmental variable blocks. In order to make valid comparisons across regressions, the sixteen variables that entered significantly ($p<.01$) for either men or women were pooled and force-entered as a common set of independent variables for the final regression analyses. T-tests were then conducted to assess whether the effects of any independent variables differed significantly between men and women.

Variables

As discussed, an emotional health factor containing six YFCY measures of psychological well-being served as the dependent variable for this study, and two items from the CIRP were combined to create the pre-test. In both sets of regressions, the pre-test was force-entered into the regression, by itself, in the first block.

Although the final regression analyses only included the sixteen independent variables that entered the preliminary regression analyses, the total pool of 69 variables is summarized below. For variables described as composites or factor scales, Appendix B provides factor loadings and Cronbach's alphas.

Input variables included the following: high school grade point average, parents' marital status, socioeconomic background (a composite measure including parental education and income), religious affiliation, race, student activities and feelings during high school, concerns about financing college, expectations about and reasons for going to college, and three factor scales (high school: hedonism, religiousness, and using technology as entertainment).

Turning now to the environmental blocks of variables, we included four between-college variables, also known as institutional characteristics. These were: institutional type, control, selectivity, and size. Bridge variables, which are determined prior to or at the very beginning of college, comprised the next block: planned academic major, place of residence, and distance from home.

In light of the literature previously discussed, the remaining block included environmental variables pertaining to curricular and co-curricular activities during college; social interactions with faculty, peers, and family; feelings of success; personal challenges; and life changes in the first year of college. Among these, fourteen were individual items, while sixteen reflected the factor scales derived from principal components factor analysis using varimax rotation (see Appendices A and B for coding schemes and details about the factor scales). All measures in this block reflected items from the YFCY survey instrument.

Results

Table 1 displays students' self-rated emotional health broken out by gender and survey (CIRP vs. YFCY). Regardless of gender or survey, students' self-ratings were skewed towards higher emotional health. Among entering freshmen in 2000, for example, a full 95.4 percent of men and 89.6 percent of women considered their emotional health to be at least "average" relative to students their age. Nevertheless, men's reported emotional health was generally higher than was women's, with 24.5 percent of men rating themselves in the "highest 10%" in emotional health, relative to 15.7 percent of women. When assessed in terms of mean differences, self-rated emotional health was significantly higher among men than women. For both men and women, the level of emotional health declined between Fall 2000 and Spring 2001.

This decline was felt fairly evenly between men and women, resulting in an unwavering gender gap in emotional health over the first year of college.

The frequency of self-reported "depression" among men and women is presented in Table 2. In Fall 2000, women entering college were significantly more likely than men were to report experiencing depression "frequently" (10.7 percent, versus 5.5 percent among men) or "occasionally" (59.9 percent, versus 48.2 percent among men). Rates of depression increased over the first year of college for both men and women, although the average increase was larger for men. Thus, while the gender gap in self-rated emotional health relative to peers remained constant over one year, the gender gap in feelings of depression actually narrowed over the same time period.

We now turn to the question of whether the factors predicting change in emotional health differ by gender. As discussed in the prior section, the multivariate analyses focus on comparing the effects of a common set of independent variables that had entered preliminary separate-gender regression analyses. A total of sixteen independent variables are included in the analyses presented here, fourteen of which remained significant at the final step for at least one group. For each independent variable, Table 3 includes simple correlations (with the dependent variable) along with two regression coefficients taken from the last step in the analysis: (1) the standardized regression coefficient (or "Beta") which signifies the relative strength of each independent variable, and (2) the unstandardized regression coefficient (or "b") which enables comparisons between men and women.

Further, analysis of regression coefficients, particularly Betas, helps us to better understand the interrelationships among independent variables. In other words, while Table 3 displays the simple correlation and final standardized regression coefficient for each variable, it

is also important to examine how relationships between independent and dependent variables change throughout the course of the regression (i.e., does the effect of particular independent variables become stronger or weaker as the result of other variables entering the equation?). The importance of "following the Betas" as an approach that capitalizes on inherent multicollinearity is detailed in Astin (1993a) and Sax (1996).

The sixteen independent variables accounted for 44 percent of the variance in emotional health for women and 46 percent of the variance for men. As expected, the emotional health pre-test carried the largest weight in both regressions. An additional two input characteristics predicted emotional health for at least one group. First, feeling "overwhelmed" at the point of college entry contributed to greater declines in emotional health self-rating for both men and women. While it is no surprise that feeling overwhelmed relates to lower levels of emotional health, this relationship remains significant for both men and women even when the emotional health pretest is controlled, suggesting that feelings of stress at the point of college entry have... lingering effects on emotional well-being. Second, emotional health is also influenced by the decision to attend college in order to "get away from home." In this case, getting away from home enhances emotional well-being for women, but has no significant effect on men.

Within the second block of independent variables ("Environments and Experiences"), the strongest predictors relate to the students' social integration into the campus community. Chief among these was having a strong student support network. This variable, which encompasses both academic and social interactions, promoted emotional well-being for both men and women. In addition, hours per week spent socializing exerted a positive effect on emotional health for women only. (The relationship is positive for men, but lost significance when the student support network measure was controlled.)

Negative peer interactions, as reflected in the factors for "peer pressure" and "residence problems," contributed to overall declines in emotional health for both groups of students. Interestingly, an examination of changes in Beta coefficients across each step in the analysis indicates that the effect of residential problems became smaller due to the entry of the peer pressure measure among men and women. This suggests that peer pressure (i.e., the pressure to conform and to do things one would rather not do) is quite likely an element of the roommate problems reported by students.

The experiential variables described thus far reflect the role of students' interactions—either positive or negative—with other students. Two additional variables shed light on how students' sense of emotional health is shaped by behaviors that distance them from on-campus peer networks. First is the desire to spend free time alone, which exerts a negative effect on emotional health for both groups, but a stronger effect among men than women. Second is the effect of frequency of e-mail communications with family and friends off-campus, which detracts from emotional health for women only. A closer look at the analysis reveals that this negative effect would probably not have been detected if "student support network" were not included in the analysis. In other words, women who maintain high levels of off-campus communication also tend to have a strong student support network on campus. Once the effects of a student support network on emotional health are accounted for, we see that the unique effect of communicating regularly with off-campus friends and family is negative.

An additional set of predictors sheds light on the role of academic engagement in students' emotional well-being, although it should be noted that academic predictors were generally weak relative to the social indicators previously discussed. The academic success factor (a combination of grades and self-ratings) contributed to higher levels of emotional health

for both men and women. For women only, feeling "bored in class" related to lower levels of emotional well-being at the end of the first college year. In addition, female students' emotional health was bolstered when they felt successful integrating into the campus structure (i.e., utilizing services, making connections with faculty and staff). However, the use of one particular service—psychological counseling—was associated with declines in emotional health for women only. It is important, though, to acknowledge that declines in emotional health may very well precede the visit to a counselor (a.k.a. the "chicken and egg" syndrome).

Students' financial situation also plays a role in predicting emotional well-being during the freshman year. Serious financial difficulties, including credit card debt and excess spending, contribute to significant declines in the emotional health for both men and women.

Also noteworthy, two college experiences that were included in the final analysis resulted in no statistically significant direct effects on emotional well-being. The first is watching television, which had a significant negative relationship with women's emotional health, but no direct effects by the final step. The relationship between these two variables was accounted for by the variable "student support network," which itself has a negative relationship with television watching. In other words, television's negative "effect" on women's emotional health is explained by the fact that women who spend more time watching television are less likely to have a strong network of campus friends.

The second variable that was reduced to non-significance by the final step for either group is "academic truancy" (skipping or coming late to class). This factor is related to lower levels of emotional health for men and women, but its effects are accounted for by academic success (which is lower for students who miss class) and classroom boredom (which is higher for students who miss class).

Finally, several variables that were not included in the final analysis are nevertheless associated with emotional health for men and women. First, both religiousness as well as Greek system membership relate to higher levels of self-reported emotional health at the start of college (i.e., the pretest), but play no direct role in the development of emotional health over the first college year. Second, time spent doing volunteer work, getting involved in student clubs/groups, and exercising/playing sports each relate to higher levels of emotional health, but their effects are indirect through the variable "student support network." In other words, although these activities are relevant to students' emotional health, such associations are perhaps best explained by the social nature of the activities.

Discussion

In this study, depression, isolation, and loneliness serve as primary indicators of first-year students' sense of emotional well-being. Between the time that students begin college and the end of their freshman year, declines in emotional health are apparent for both men and women. While patterns of decline are observable across different types of campuses, it is imperative for future research to examine this issue longitudinally using even larger samples of students and institutions than were available for this study. If freshman year declines in emotional health are indeed widespread, we must then assess the longer-term implications of this phenomenon on a broad range of outcomes within and beyond college.

Results also reveal lower levels of emotional health for women than men, a finding that is consistent with prior research on men and women in a variety of settings. While this gender gap was not unexpected, future research should assess whether college women are actually more "at-risk" emotionally than their male peers. Or, do these results merely reflect a greater willingness among women to admit feeling depressed, lonely, or isolated? Knowing what lies at the root of

these gender differences would enable higher education practitioners to develop more effective strategies aimed at promoting emotional well-being for both men and women.

For now, we can look to the findings of this study as a first attempt to discern how students' emotional health develops over the freshman year. Regardless of gender, emotional health is strengthened by strong and supportive connections to peers. By the same token, problematic relationships with roommates or classmates (i.e., those characterized by conflict, pressure to conform to certain values or behaviors, etc.) serve to handicap students emotionally. Such findings clearly reinforce the work of other researchers, which has demonstrated the importance of peer relationships in students' lives (e.g., Astin, 1993b; Christie & Dinham, 1991; Hartup, 1993). Moreover, the self-perceived quality of peer relationships are critical to the emotional health of women and men in this sample, suggesting that interpersonal relationships may be equally as important to the development of female and male students in college. Future research ought to explore this possibility further.

The role of romantic partners remains less clear, perhaps reflecting the way in which students' romantic experiences were measured on the follow-up survey. We know the frequency with which these students dated or whether they were involved in serious or long-distance romantic relationships. However, these data do not provide any information about the quality of such romantic attachments. Therefore, the fact that these experiences contributed so little to students' emotional well-being may be more a reflection of weak measures than weak effects. More research is needed to examine the qualitative dimensions of students' romantic lives and the impact of these various dimensions on emotional well-being.

Pursuant to this study's aims, we did detect an important gender difference in the development of college students' emotional health: the role of family. Prior work has indicated

that family relationships are a key factor in students' emotional well-being, but thus far there has been little consensus as to whether family bonds help or hinder students' emotional adjustment. In this study, distancing oneself from family had a positive influence on women's sense of emotional well-being, but had no significant effect on men's. Specifically, attending college in order to "get away from home" promoted emotional well-being for women, as did staying in less frequent e-mail communication with family and non-college friends. Perhaps college-going fulfills an important and unique goal for many young women—that of defining themselves outside of a familial context and on their own terms. Alternately, perhaps "wanting to get away from home" and little correspondence with family members characterize young women who are self-assured, independent-minded, and highly self-sufficient, which may reflect and contribute to higher levels of emotional well-being after one college year. Still a third possibility: perhaps young men are simply not as dependent on or closely tied to their family as are young women (as several researchers suggest—e.g., Kenny & Donaldson, 1991), therefore explaining why family plays a less salient role in their emotional lives as college freshmen.

The present study also provides evidence that academic factors contribute directly to emotional health. While prior literature suggested that academic performance and feedback might be more strongly related to women's emotional state than to men's, we found no such gender difference. Instead, academic performance and self-confidence exerted a positive, albeit weak, effect on emotional health for both men and women. However, an affective element of the classroom experience—feeling "bored in class—was negatively related to emotional health for women only. This latter finding raises the "chicken and egg" question since boredom in class may in fact result from feelings of depression, isolation or other indicators of emotional distress.

Why this would be the case for women, but not for men, raises an interesting question for future research.

Conclusion

In this study, we have looked at students' emotional health from several angles and addressed many "unknowns" in the existing body of literature of adolescent psychological well-being. The importance of peers is clear, although the effect of peer relationships depends on students' perceptions of the relationship itself. Certain measures of the student's relationship with family members also affect emotional health, although this seems to be true mostly of women. Academic experiences are not unrelated to emotional well-being either, a critical point for educators to keep in mind as they determine why and how some students succeed in the classroom and others do not. The need for additional research is pressing, however. To what extent are these findings generalizable to other student populations? And how might students' emotional health affect other college outcomes, such as level of integration in the campus community, degree aspirations, and persistence to graduation? These questions might best be addressed via longitudinal study with multiple points of data collection, so that changes in emotional health over the freshman year can be linked to subsequent college experiences and outcomes.

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Appendix A

Variable Definitions and Coding Schemes

Dependent Variable	**Coding Scheme**
Emotional Health	Six-item factor (*see Appendix B for items*)
Independent Variables	**Coding Scheme**
Inputs: Background Characteristics and High School Activities	
Emotional Health Pre-Test	Two-item factor (*see Appendix B for items*)
High School GPA	Eight-point scale: 1= "D", to 8= "A or A+"
Parents' Status: Living together	Dichotomous variable: 1= "not marked", 2= "marked"
Socioeconomic Background	Three-item composite measure (*see Appendix B for items*)
Religion: Jewish	Dichotomous variable: 1= "not marked", 2= "marked"
Religion: Protestant	Dichotomous variable: 1= "not marked", 2= "marked"
Religion: Roman Catholic	Dichotomous variable: 1= "not marked", 2= "marked"
Religion: Other	Dichotomous variable: 1= "not marked", 2= "marked"
Religion: None	Dichotomous variable: 1= "not marked", 2= "marked"
Race: White/Caucasian	Dichotomous variable: 1= "not marked", 2= "marked"
Race: African American/Black	Dichotomous variable: 1= "not marked", 2= "marked"
Race: Asian American/Asian	Dichotomous variable: 1= "not marked", 2= "marked"
Race: Chicano/Latino	Dichotomous variable: 1= "not marked", 2= "marked"
Performed volunteer work (High School)	Three-point scale: 1= "not at all", to 3= "frequently"
Concern about financing education	Three-point scale: 1= "none", to 3= "major"

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Expectation: Be satisfied with your college	Four-point scale: 1= "no chance", to 4= "very good chance"
Felt overwhelmed by all I had to do (High School)	Three-point scale: 1= "not at all", to 3= "frequently"
Hours per week: Exercise or sports (High School)	Eight-point scale: 1= "none", to 8= "over 20"
Hours per week: Student clubs or groups (High School)	Eight-point scale: 1= "none", to 8= "over 20"
Hours per week: Studying/homework (High School)	Eight-point scale: 1= "none", to 8= "over 20"
Reason (for going to college): Wanted to get away from home	Three-point scale: 1= "not important", to 3= "very important"
Self-rating: Physical health	Five-point scale: 1= "lowest 10%", to 5= "highest 10%
Hedonist (High School)	Four-item factor (*see Appendix B for items*)
Religiousness (High School)	Three-item factor (*see Appendix B for items*)
Technology as Entertainment (High School)	Three-item factor (*see Appendix B for items*
Environments: Institutional Characteristics	
Institutional type (University)	Dichotomous variable: 1= "not marked", 2= "marked"
Institutional control (Private)	Dichotomous variable: 1= "not marked", 2= "marked"
Institutional selectivity	Continuous variable
Institutional size	Continuous variable
Environments: Bridge Variables	
Place of Residence (On campus)	Dichotomous variable: 1= "not marked", 2= "marked"
Distance from permanent home	Six-point scale: 1= "5 or less", to 6= "over 500"
Planned Major: Business	Dichotomous variable: 1= "not marked", 2= "marked"
Planned Major: Education	Dichotomous variable: 1= "not marked", 2= "marked"
Planned Major: English, Humanities, and Fine Arts	Dichotomous variable: 1= "not marked", 2= "marked"

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Planned Major: Science, Mathematics, and Engineering	Dichotomous variable: 1= "not marked", 2= "marked"
Planned Major: Social Science, History, and Political Science	Dichotomous variable: 1= "not marked", 2= "marked"
Planned Major: Health Professional	Dichotomous variable: 1= "not marked", 2= "marked"
Planned Major: Agriculture, Other Technical, and Other	Dichotomous variable: 1= "not marked", 2= "marked"
Planned Major: Undecided	Dichotomous variable: 1= "not marked", 2= "marked"
Environments and College Experiences	
Participated in first-year seminar class	Dichotomous variable: 1= "not marked", 2= "marked"
Joined fraternity or sorority	Dichotomous variable: 1= "not marked", 2= "marked"
Participated in volunteer or community service work	Three-point scale: 1= "not at all", to 3= "frequently"
Sought personal counseling	Three-point scale: 1= "not at all", to 3= "frequently"
Spent time with family	Three-point scale: 1= "not at all", to 3= "frequently"
Felt bored in class	Three-point scale: 1= "not at all", to 3= "frequently"
Spoke up in class	Three-point scale: 1= "not at all", to 3= "frequently"
Felt: A need to break away from family to succeed	Five-point scale: 1= "never", to 5= "always"
Felt: That family supported academic pursuits	Five-point scale: 1= "never", to 5= "always"
Preferred to spend my free time alone	Three-point scale: 1= "not at all", to 3= "frequently"
Hours per week: Exercise or sports	Nine-point scale: 1= "none", to 9= "over 30"
Hours per week: Socializing with friends	Nine-point scale: 1= "none", to 9= "over 30"
Hours per week: Student clubs or groups	Nine-point scale: 1= "none", to 9= "over 30"

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Hours per week: Watching TV	Nine-point scale: 1= "none", to 9= "over 30"
Hedonist	Four-item factor (*see Appendix B for items*)
Academic Success	Six-item factor (*see Appendix B for items*)
Religiousness	Four-item factor (*see Appendix B for items*)
External Commitments	Five-item factor (*see Appendix B for items*)
Faculty/T.A. Interaction	Three-item factor (*see Appendix B for items*)
Student Support Network	Four-item factor (*see Appendix B for items*)
Off-Campus Email Communications	Two-item factor (*see Appendix B for items*)
Problems in Place of Residence	Four-item factor (*see Appendix B for items*)
Success with Campus Integration	Three-item factor (*see Appendix B for items*)
Financial Problems	Four-item factor (*see Appendix B for items*)
Technology as Entertainment	Two-item factor (*see Appendix B for items*)
Romance	Four-item factor (*see Appendix B for items*)
Peer Pressure	Two-item factor (*see Appendix B for items*)
Serious Life Crisis	Three-item factor (*see Appendix B for items*)
Academic Truancy	Two-item factor (*see Appendix B for items*)
Time Spent on Academics	Two-item factor (*see Appendix B for items*)

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Appendix B
Items Constituting Composite Measures and Factors Scales

Factor	Loading
Emotional Health (á=.71)	
Felt: Depressed (reverse-coded)[1]	.74
Felt: Isolated from campus life (reverse-coded)[2]	.67
Felt: Lonely or homesick (reverse-coded)[2]	.65
Self-Rating: Emotional health[3]	.65
Felt: Worried about meeting new people (reverse-coded)[2]	.62
Felt: Unmotivated (reverse-coded)[2]	.57
Emotional Health Pre-Test (á=.56)	
Felt: Depressed (reverse-coded)[1]	.84
Self-rating: Emotional health[3]	.84
Hedonist (High School) (á=.64)	
Drank beer[4]	.88
Drank wine or liquor[4]	.83
Hours per week: Partying[5]	.73
Smoked cigarettes[4]	.66
Religiousness (High School) (á=.67)	
Hours per week: Praying or meditating[5]	.83
Attended religious service[4]	.80
Discussed religion[4]	.75
Technology as Entertainment (High School) (á=.40)	
Hours per week: Playing video/computer games[5]	.81
Hours per week: Watching TV[6]	.69
Used the Internet[4]	.49
Hedonist (á=.74)	
Drank beer[4]	.90
Drank wine or liquor[4]	.88
Hours per week: Partying[6]	.82
Smoked cigarettes[4]	.64
Academic Success (á=.73)	
Self-rated success: Adjusting to the academic demands of college[7]	.79
Self-rated success: Developing effective study skills[7]	.77
College GPA[8]	.71
Self-rated success: Understanding academic expectations[7]	.71
Self-rated success: Managing your time effectively[7]	.66
Did not fail one or more courses[9]	.52
Religiousness (á=.77)	
Attended a religious service[4]	.84
Participated in religious clubs or groups[4]	.82
Hours per week: Praying or meditating[6]	.75
Discussed religion[4]	.70

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External Commitments (á=.61)	
Hours per week: Working for pay off-campus[6]	.74
Did not have time to study due to job responsibilities[4]	.70
Hours per week: Commuting[6]	.70
Did not have time to study due to family responsibilities[4]	.62
Hours per week: Household/childcare duties[6]	.61
Faculty/T.A. Interaction (á=.68)	
Hours per week: Meeting with faculty during office hours[6]	.84
Hours per week: Interacting with faculty outside class or office hours[6]	.78
Hours per week: Meeting with T.A. during office hours[6]	.71
Student Support Network (á=.65)	
Self-rated success: Establishing network of friends on campus[7]	.74
Studied with other students[4]	.72
Developed close friendships with other students[9]	.72
Discussed course content with students outside of class[4]	.64
Off-Campus Email Communications (á=.62)	
Emailed: Other friends or acquaintances[10]	.86
Emailed: Your family[10]	.86
Problems in Place of Residence (á=.59)	
Didn't get along with my roommate(s)[4]	.77
Felt: Burdened by a roommate's problems[11]	.74
Felt: Did not have enough personal space[11]	.60
Felt: Forced to interact with students you dislike[11]	.57
Success with Campus Integration (á=.60)	
Self-rated success: Utilizing campus services available to students[7]	.78
Self-rated success: Dealing with campus bureaucracy[7]	.76
Self-rated success: Developing meaningful connections w/ faculty/staff[7]	.70
Financial Problems (á=.57)	
Had serious financial difficulties[9]	.76
Accumulated excessive credit card debt[4]	.71
Overspent my budget[4]	.69
Had concern about financing college[12]	.57
Technology as Entertainment (á=.48)	
Hours per week: Playing video/computer games[6]	.81
Hours per week: Surfing the Internet[6]	.81
Romance (á=.50)	
Had serious romantic relationship[9]	.77
Went on a date[4]	.70
Had long-distance romantic relationship[9]	.56
Broke-up with romantic partner[9]	.50
Peer Pressure (á=.60)	
Felt: Pressure to conform to friends' values/beliefs[11]	.85
Felt: Pressure from your friends to do things you didn't want to do[11]	.85

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Serious Life Crisis (á=.56)	
Serious illness of close friend/family member[9]	.79
Serious problem involving close friend/family member[9]	.71
Death of close friend/family member[9]	.69
Academic Truancy (á=.53)	
Came late to class[4]	.82
Skipped class[4]	.82
Time Spent on Academics (á=.47)	
Hours per week: Attending classes/labs[6]	.81
Hours per week: Studying/homework[6]	.81
Composite Measure	
Socioeconomic Background (á=.69)	
Father's Level of Education[13]	.86
Mother's Level of Education[13]	.83
Parents' Income[14]	.72

[1]Three-point scale: 1= "frequently", to 3= "not at all"
[2]Five-point scale: 1= "always", to 5= "never"
[3]Five-point scale: 1= "lowest 10%", to 5= "highest 10%"
[4]Three-point scale: 1= "not at all", to 3= "frequently"
[5]Eight-point scale: 1= "none", to 8= "over 20"
[6]Nine-point scale: 1= "none", to 9= "over 30"
[7]Three-point scale: 1= "unsuccessful", to 3= "very successful"
[8]Six-point scale: 1= "C- or less (below 1.75)", to 6= "A (3.75-4.0)"
[9]Dichotomous variable: 1= "not marked", 2= "marked"
[10]Five-point scale: 1= "never", to 5= "daily"
[11]Five-point scale: 1= "never", to 5= "always"
[12]Three-point scale: 1= "none", to 3= "major"
[13]Eight-point scale: 1= "grammar school or less", to 8= "graduate degree"
[14]Fourteen-point scale: 1= "less than $6,000", to 14= "$200,000 or more"

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Table 1. *Emotional Health Self-Rating in the First Year of College, Female-Male Comparison 2000-2001.*

	2000 CIRP			2001 YFCY		
Self-Rating:	Women	Men	Difference W-M	Women	Men	Difference W-M
Highest 10%	15.7	24.5	-8.8	10.8	20.7	-9.9
Above average	32.7	35.8	-3.1	29.7	31.7	-2.0
Average	41.2	35.1	+6.1	43.9	34.3	+9.6
Below average	9.9	4.0	+5.9	13.8	10.8	+3.0
Lowest 10%	0.5	0.6	-0.1	1.8	2.5	-0.7

In 2000, mean for women = 3.53; mean for men = 3.80; $t=19.80$, $p<.001$.
In 2001, mean for women = 3.34; mean for men = 3.56; $t=14.82$, $p<.001$.
Mean for women in 2000 = 3.53; 2001 = 3.34; $t=21.76$, $p<.001$.
Mean for men in 2000 = 3.80; 2001 = 3.56; $t=17.64$, $p<.001$.

Table 2. *Frequency of Depression in the First Year of College, Female-Male Comparison 2000-2001.*

	2000 CIRP			2001 YFCY		
			Difference			Difference
Felt depressed:	Women	Men	W-M	Women	Men	W-M
Frequently	10.7	5.5	+5.2	20.9	15.1	+5.8
Occasionally	59.9	48.2	+11.7	55.3	50.2	+5.1
Not at all	29.4	46.2	-16.8	23.8	34.7	-10.9

In 2000, mean for women = 1.81; mean for men = 1.59; t=-24.10, p<.001.

In 2001, mean for women = 1.97; mean for men = 1.80; t=-15.83, p<.001.

Mean for women in 2000 = 1.81; 2001 = 1.97; t=-23.83, p<.001.

Mean for men in 2000 = 1.59; 2001 = 1.80; t=-27.32, p<.001.

Table 3. *Predicting Emotional Health in the First College Year: A Comparison of Regression Coefficients for Women and Men.*

Variable	Women (N=2,434)		Men (N=884)		Significant
	r	Final beta (b)	r	Final beta (b)	Difference Between Men and Women
Inputs					
Emotional health pre-test	.43*	.27* (.81)	.45*	.27* (.86)	
Frequency: Felt overwhelmed in h.s.	-.22*	-.08* (-.52)	-.21*	-.08* (-.53)	
Reason for college: To get away from home	-.02	.05* (.26)	-.13*	-.04 (-.21)	X
Environments & Experiences					
Hours per week: Socializing with friends	.16*	.08* (.17)	.15*	.06 (.13)	
Frequency: Preferred to spend free time alone	-.24*	-.10* (-.67)	-.34*	-.18* (-1.25)	X
Frequency: Sought personal counseling	-.17*	-.08* (-.70)	-.16*	-.05 (-.54)	
Frequency: Felt bored in class	-.22*	-.09* (-.64)	-.15*	-.05 (-.37)	
Hours per week: Watching T.V.	-.07*	-.03 (-.08)	-.05	.00 (.00)	
Factor scale: Academic success	.22*	.05* (.07)	.22*	.10* (.14)	
Factor scale: Student support network	.34*	.21* (.51)	.35*	.24* (.56)	
Factor scale: Off-campus email communications	.03	-.08* (-.14)	.01	-.04 (-.07)	
Factor scale: Residence problems	-.33*	-.17* (-.24)	-.32*	-.15* (-.21)	
Factor scale: Success with campus integration	.29*	.10* (.27)	.23*	.03 (.10)	X
Factor scale: Financial problems	-.21*	-.05* (-.12)	-.22*	-.07* (-.19)	
Factor scale: Peer pressure	-.29*	-.17* (-.45)	-.29*	-.17* (-.45)	
Factor scale: Academic truancy	-.10*	-.02 (-.09)	-.11*	-.02 (-.08)	

R^2 for women = .44; R^2 for men = .46

*$p \leq .01$

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